

# **SPREAD POLARIZATION TRANSMITTER AND ASSOCIATED SYSTEM AND METHOD OF OPERATION**

## **ABSTRACT OF THE DISCLOSURE**

- 5           A spread polarization transmitter for transmitting at least one light signal comprises a spread-spectrum communication apparatus and a polarization modulator. The spread-spectrum communication apparatus modulates the at least one light signal according to a spread-spectrum modulation technique. The polarization modulator comprises a polarizer and a magnetic bubble waveguide. The polarizer is capable of
- 10   polarizing the at least one spread-spectrum modulated light signal in a polarized direction. And the magnetic bubble waveguide, which is configured in accordance with a pseudo-random polarization code sequence such that the plurality of magnetic bubble domains assume a time varying position representative of the pseudo-random polarization code sequence, is capable of receiving at least one polarized, spread-
- 15   spectrum modulated light signal. Thereafter, the magnetic bubble waveguide is capable of at least partially rotating the polarized, spread-spectrum modulated light signals by a predetermined angle from the polarized direction during transmission therethrough to create spread polarization modulated light signals.